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EXAMINER

MORGAN, E

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 14

Application Number: 09/008,148
Filing Date: January 16, 1998
Appellant(s): Clinton O. Fruitman

Laura J. Zeman
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed July 6, 1999.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because Examiner believes claims 4-8 stand or fall together being drawn to the same invention of a method and apparatus for planarizing a workpiece. Both groupings use a non-cellular pad, slurry, and relative movement between a workpiece and the pad in the presence of the slurry, therefore, they stand or fall together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,752,875	RONAY	5-1998
4,048,765	SAMUELSON	9-1977

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-13, 16-19, 1, 2 of U.S. Patent No. 5,769,691.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the present application is directed to planarizing a workpiece with a lapping surface and

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the patent claims planarizing a silicon wafer with a lapping pad. This is an obvious variation over the patented subject matter and the term "pad" would include a "soft and pliable material."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ronay 5,752,875 in view of Samuelson-4,048,765.

Ronay discloses polishing a wafer with a pad and a slurry solution of silica and a hydroxide with the claimed size range and weight percentage (col 3-col 4). Ronay discloses a polyurethane pad to polish wafer but not specifically a non-cellular pad. However, Samuelson teaches polishing with a non-cellular pad of non-cellular urethane that is flexible and free to deform with workpiece. Therefore, it would have been obvious to one of ordinary at time invention was made to substitute the pad in Ronay with a non-cellular pad, as taught by Samuelson, in order to increase the heat distortion, decrease the friction, and prevent clogging and build-up, therefore, increasing pad life to 3-5 times that of other pads.

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(11) Response to Argument

The terminal disclaimer does not comply with 37 CFR 1.321(b) and/or (c) because:

The person who has signed the disclaimer has not stated the extent of his/her interest, or the business entity's interest, in the application/patent. See 37 CFR 1.321(b)(3).

On pages 4-9, Appellant contends that Examiner has not established a *prima facie* case of obviousness based on three points. The first point argues that the prior art does not teach or suggest all of Appellant's claim limitations. It is pointed out that Appellant is arguing limitations in a dependent claim (5 and 10) and not the independent claims 4 and 9. Examiner groups claims 4-10 to stand or fall together and will thus argue the claims together and not pick apart limitations in various claims. Appellant contends that the limitation of the "lapping surface is made from a soft and pliable material that conforms to integrated circuit device layers on the workpiece to resist damage..." is not shown by the combination of Ronay and Samuelson. Firstly, in response to applicant's argument that this feature is not shown, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Ronay discloses a polyurethane pad that polishes a dielectric wafer of a semiconductor that will be scratch free.

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Samuelson teaches a non-cellular polyurethane pad which is excellent for polishing operations in various delicate operations (col.10 line 14) and is “free to deform during use and is formed of a flexible elastomeric polyurethane.” Therefore the pad of Samuelson is “soft and pliable” and capable of “conforming” to the workpiece and resisting damage. The pad of Samuelson would not “damage” the workpiece because it achieves fine polishing or “finishing” of a workpiece. Therefore, contrary to Appellant’s arguments, the combination of Ronay in view of Samuelson clearly establishes a *prima facie* case of obviousness.

Secondly, Appellant argues that the prior art of record does not suggest the combination. However, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one polyurethane pad is being substituted for another polyurethane pad, that is, the cellular polyurethane pad of Ronay is being substituted by the non-cellular polyurethane pad of Samuelson based on the clear advantages addressed by Samuelson at column 11, lines 49-57. Samuelson clearly points out that his non-cellular polishing pad “seldom contain more than 2 or 3 percent by volume of void spaces so that the density and tensile strength are relatively high. The finishing wheels made according to the invention have a surprisingly long useful life because of their ability to operate effectively

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without clogging or overheating and without rapid deterioration.” This clearly answers Appellant’s argument at the top of page 7 that states “Examiner did not identify any express or implied suggestion in the references to combine the teachings because there is no such express or implied suggestion.” Examiner used the same motivation **expressly stated** by Samuelson in her rejection and, as identified above, is found in the teaching reference. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is pointed out on page 2 of Appellant’s specification, that traditional polishing techniques are unsatisfactory because polishing pads tend to generate too much heat and that this heat is problematic. Appellant’s argument on page 7 that lapping pads and polishing pads are not interchangeable or equivalent is completely wrong. These terms (i.e. lapping, polishing, grinding, abrading, honing) are used interchangeably for performing various abrading operations. In fact Appellant uses them interchangeably in the specification, such as on page 3, line 5, “...substantially flat *polishing* pad effectively performs a *lapping* operation...”(emphasis added). Samuelson clearly teaches advantages that would motivate one of ordinary skill to use a non-cellular pad. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was

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within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that Samuelson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Samuelson indeed is analogous art found in the subclass of the abrading art under "utilizing nonrigid tool." Because his pad is "suitable for finishing steel or metal workpieces" (as pointed out by Appellant) does not mean they are the only workpieces able to be finished by such a pad. Samuelson also states at col. 10, line 15, that his tool is excellent for "various delicate operations." On page 9, Appellant alleges that the pad of Samuelson would be "too abrasive and high in tensile strength" to avoid damage to a workpiece. However, as pointed out previously, his pad does not "damage" but finely finish a workpiece. Furthermore, these allegations are not substantiated by any facts, but by mere opinion. How can Appellant conclude that the pad would be "too abrasive or high in tensile strength" without testing such results? The combination is not based on the teaching of Samuelson's "abrasive" or "high tensile strength" pad but on Samuelson's teaching of a non-cellular pad. Certainly Appellant's non-cellular pad would have a higher density and tensile strength than that of a cellular pad.

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In response to the references not resulting in the claimed invention, Examiner upholds that the combination would indeed meet all of Appellant's claimed limitations. Appellant repeatedly contends that substituting a cellular polyurethane pad for a non-cellular polyurethane pad would *damage* a workpiece. This is unfounded. The pad taught by Samuelson does not damage the intended workpiece disclosed by him, therefore, substituting a non-cellular pad made of non-cellular polyurethane material into Ronay would not damage the workpiece either.


On page 10, part B of the Brief, Appellant reiterates arguments that have already been addressed and therefore, will not be repeated.

Part C also reiterates arguments and does not argue the combination of references but contends that the non-cellular polyurethane material taught by Samuelson would not "conform" to the workpiece. However, this has already been addressed in that both pads of Ronay and Samuelson are soft and pliable and free to deform and therefore, would be capable of conforming to the intended workpiece.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


9/24/99

EM

September 24, 1999

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